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BIRD-LIFE IN POMERANIA.

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As we traverse the forest in the last days of February the dark firs are still clad in wintry garb, the bare oak and beech trees stretch out their naked arms imploringly to the spring, no longer able to hide from the eye of the ornithologist the eyries which they embrace so protectingly. The huge nest of the Osprey is still there waiting for its light-winged occupants; the wild storms have already much shaken its foundation, a long dry branch of the beech tree. Snow covers everything as far as the eye can reach; trees and bushes are still in the icy fetters of winter. All life seems to have forsaken the forest. Thus the Pomeranian woods seem empty and forlorn; no gay Finch (*Fink*) is twittering, no Willow Wren (*Laubvogel*) chatters in the foliage, through the trees at night no touching melody is warbled by the Nightingale (*Nachtigall*): all these delicate inhabitants of the forest have gone to the south to escape the rough caresses of winter.

And yet all life has not disappeared. Our carpenter, the Pied Woodpecker (*Specht*), with his black and white coat, is still with us, and, seated on the trunk of an oak, breaks, with his busy knocking, the monotonous silence of the forest. He looks up in astonishment as he hears the scrunching of the snow at our approach, then flies off, angrily screaming because we have dared to disturb him at his work. With him have remained his two cousins, the "Greencoat" (*Grünrockige*), who, according to the popular belief, has the gift of finding the "spring-root," and the

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Great Black Woodpecker, with his little red cap of liberty. Various superstitions are connected with the Woodpecker, as, for instance, that he who carries its beak in his pocket will not be stung by the bees when depriving them of their honey. But these traditions are too critically opposed in our time; naturalists have spied very closely into the life-history of Woodpeckers, and have discovered habits of much more interest and importance to the foresters. Dr. Altum has given us some very accurate information of these habits in his 'Forst-Zoologie.'

From a fir tree in front of us we suddenly hear a soft twitter; a troop of quaint little Titmice (*Meisen*) have invaded it, and, ruffling their plain grey feathers, climb the dark branches looking for food. Their perpetual cry is translated by witty folks into "flitig, flitig, flitig" (busy, busy, busy), and sounds to the lazy workman as a mocking incentive to labour. From branch to branch, in great zest and hurry, now on the top of the bough, now beneath it, never resting, they run round the tree, or hang on the under side of it, picking out the insect-egg and chrysalids which are hidden in the crevices of the bark. Such an occupation, in spite of their insignificance, makes these active and useful little birds favourites with everyone; they cannot be too much encouraged and protected.

And now we come upon a couple of lovers in this wintry place. Two Crossbills (*Kreuzschnabel*), in gay-coloured nuptial dress, unmindful of the cold, are having a playful game amongst those great fir-branches, at the root of which the little Wrens (*Zaunkönig*) are hopping and singing their bridal song, in spite of ice and snow. A Raven (*Rabe*), who still claims an important position among birds,—because his ancestors were the constant companions of Odin, and sat on the shoulders of the god as his chief counsellors and messengers,—looks down from above, scolding and croaking. The Crossbill displays a very peculiar form of bill, the point of the mandibles being crossed sideways. The pretended origin of this abnormal form of beak has been made the subject of a poem by the Magistrats-rath, Jacob Schnerr, who lived at Nuremberg in the beginning of the century, as well as by the great American poet Longfellow. In Pomerania it is believed that the Crossbill carries a blessing with it, and that a house in which one of these birds is kept will never be struck by lightning.

Continuing our walk, we come to a clearing. At the entrance

of the wood some Buntings (*Ammern*) are twittering hungrily, “*Bur lot mi in din Schün*” (“please let me into your barn”), while close by, in the branches of an alder tree, a flock of Siskins (*Zeisige*) are chattering gaily and feeding on the alder seeds. A Crested Lark (*Haubenlerche*) runs about in company with Greenfinches (*Grünsfinken*) and Yellow Buntings (*Gelbgänschen*), busily pecking about in the cart-ruts, heedless of a Rough-legged Buzzard (*Rauhfussbussard*), clumsily flying over the field, looking for prey. But at this time of year this northern visitor can be as little trusted as his cousin the Common Buzzard (*Mäusebussard*). If opportunity serves neither of them will refuse a hare or a partridge, and thereby incur the anger of Sportsmen, though, on the other hand, they carry on a praiseworthy warfare against rats and mice, those enemies of cultivation.

Near the forester’s house, which we see at a little distance, a Skylark (*Feldlerche*), but recently returned from his travels, and welcomed as the first harbinger of spring, rises in the clear wintry air, warbling his greetings to the sun. From the roof of the barn a thievish Magpie (*Elster*) is teasing the dog, the guardian of the house. Bullfinches (*Dompaffen*), whose red breasts contrast prettily with the white snow, Linnets (*Hänflinge*), and impudent Sparrows (*Sperlinge*) amuse themselves on the trees of the little garden, each in its own way, while a Starling (*Staar*) sits on a branch, staring at the sun, and pipes and twitters his varied notes, beating time with his wings.

Our path leads us along the hedge of the forester’s garden, and suddenly a Blackbird (*Amsel*) dashes out from his winter shelter, and with a loud far-sounding note warns every animal in the forest of approaching danger, and urges them to flee without delay to their hiding-places. This unluckily deprives us of a rare sight in this country—a Golden Eagle (*Steinadler*), which, to the great regret of the ornithologist has probably now disappeared from our list of resident birds (and whose habits therefore we should much like to have observed), rises at a great distance, startled by the cry of the Blackbird, and soars away with dignity into the dense forest. We hasten to the place whence he rose, and find a hare, recently slaughtered. Dr. Ekhard gives an instance of the extraordinary strength of this bird. He once saw an Eagle break the neck of a three-year-old goat with one wrench of his beak.

Beyond the field the wood again stretches onward. Here a lively troop of wandering Fieldfares (*Krammetsvögel*) have settled in some firs, and cannot tell enough of the northern home they have so recently left, and of the adventures of the journey. There is no end of chattering; merry and light-hearted are they, like all travellers.

Through the happy chatter of the Fieldfares sounds the angry scolding of a quarrelsome Jay (*Holzschreier*). "Herr Markwart," as the country people call him, flies from tree to tree with crest erect and blue-banded wing. This crafty marauding bird—this declared enemy to all singing birds, whose eggs and young he is always ready to devour—thus tries to attract the attention of the noisy travellers. As none of them, however, regard his scolding, he flies off through the wood with loud mocking cries.

On the branches of yonder old gnarled oak tree, which seems to mourn for its giant companions of former days, a Nuthatch (*Blauspecht*) runs up and down to the twitter of a Tree Creeper (*Baumläufer*), at work lower down on the trunk. A little further on the forester has spread his nets. An unfortunate Robin (*Rothkehlchen*) has been caught in them, its taste for berries having caused it to be punished with the persecuted Thrushes (*Drosseln*). The poor Thrushes themselves, which rejoice us the whole summer with their songs, and for whose destruction these nets are spread, fall into undeserved condemnation. In a district much damaged by larvae I have seen Thrushes collected in great numbers searching busily for them in the moss. At least the resident and breeding birds ought to be spared, and the nets should be set a little later in the year, when our woodland birds are gone to the south; arrivals from the north are then coming in sufficient numbers to satisfy the epicure, and to enable the foresters to gain enough by catching them.

In the depths of the dark forest, on a mighty fir tree, a pair of our largest Eagles (*Seeadler*) have taken up their abode. The male bird has flown to the lake to fish; his mate is busily engaged in repairing their gigantic nest. The remains of prey, which lie strewn about, show that the pair have made quite a raid amongst both warm- and cold-blooded animals of wood and water. There we find the bones of young roes, hares, wild ducks, and good-sized fishes. While we are still occupied in looking at the remnants of the feast, the male bird returns. Slowly, and with

measured flight, he approaches the nest, but his sharp eyes have already discovered us. With a mighty flapping of his wings he falls back, and soars higher and higher, until he reaches his mate, who has already left the tree, and together, in safe regions, they sail in wide circles, without any perceptible movement of their pinions. A pair of Ravens (*Raben*), which have their abode close by, try with vain presumption to vie with the flight of the Eagles, and to disturb, with their hoarse croaking, the tranquillity of the noble pair. But they will not condescend to notice such common fellows; and, if the Ravens dare to approach too near, a sharp peck from one of their strong beaks repels the cowards to a respectful distance.

Strangers from still further north have also arrived, and, in spite of their Arctic home, in almost tropical splendour of plumage, Waxen Chatterers (*Seidenschwänze*) are flying about in troops. The hard winter of the north and the lack of food have sent them to feed on the berries of our forests. But they need not expect undisturbed hospitality in our midst; nets and traps are already set for their reception, not because (as in olden times) they are regarded as birds of misfortune,—foretellers of approaching war,—but because, like the Thrushes, they are an appreciated delicacy. Natural appearances, not uncommon in themselves, but which pass unobserved by many, frequently give rise, through misinterpretation, to legends and superstitions. Thus it was with the appearance of the Waxen Chatterers. These brilliant birds, from unknown lands, were received as messengers of evil and so-called birds of war, plague, or misfortune; while it was said by others that they only appeared every seven years. In reality they visit us annually in larger or smaller flocks, making, with their variegated plumage, a pretty feature in a winter landscape. Until the year 1856 even ornithologists were ignorant of their birth-place and mode of breeding. To throw light on the subject several excursions were made to Lapland, Finland, and North Russia; whole winters were passed there in the search. The birds were kept in aviaries, in the hope that they would breed. Fifty roubles were offered by the ornithologists of the capital of Finland for a single nest. But all in vain, till at length an Englishman, John Wolley, who had spared neither expense nor trouble in the matter, after a long search at length discovered a breeding-place of this bird, Lapland; and, as is

often the case, after the first discovery, other nests were found every year. These charming visitors do not come alone ; other northern beauties, in company with them, seek our protection. Snowy Owls (*Schnee-eulen*), with beautiful white feathers, which, unlike our Owls (*Eulen*), do not shun the sun, but hunt also in daylight.

But now we have crossed the forest, and before us extends the coast of the Baltic and the broad shining sea, with its northern sea-visitors, which have already arrived in numbers. Quite a differently feathered world is here represented in various shapes and colours. Flocks of water birds float on the ice-cold waves, or fly singly or in flocks through the air. Close to the ice swim a flock of Long-tailed Ducks (*Eisenten*), called by the fishermen *Klashanik*, the coloured drakes with long tail-feathers. As soon as our boat approaches them they rise hastily, to return after a short flight to their native element. These sea-ducks, which breed in the north, are shot and caught in great numbers and sold at a very cheap rate for food ; but, though prepared after the most approved rules of cookery, they always taste strong and unsavoury. Further on several snow-white Swans, so celebrated in poetry and song, float silently and gracefully in majestic beauty on the water at a safe distance from our guns ; while towards the coast fly a skein of clamorous Bean Geese (*Saatgänze*), which have been feeding on the green winter corn.

Ahead of our boat swim some slender-throated birds, which prove to be Red-throated Divers (*Rothkehlige Eistaucher*). Our guns click, and all disappear below the surface ; one alone cannot follow, for his fate has overtaken him. These birds find their lonely breeding-places in Iceland, and other Arctic regions, in company with their two congeners, the Great Northern and Black-throated Divers. Some of these last-named birds, strangely enough, at one time did not quit the Pomeranian coast for the summer, but chose some lakes in the neighbourhood, which perhaps bore some resemblance to those in their more northern home. They breed there now every year, and are considered a great curiosity. But the report of our guns have made a stir amongst the other sea-fowl. Large and small flocks of different species of Ducks cross the water in all directions. Wild Ducks (*Stokenten*), Scaups (*Bergtauchenten*), Sheldrakes (*Schellenten*), Long-tailed Ducks (*Eisenten*), Pochards (*Tafelente*), with

their large brown heads, whistling Wigeon (*Pfeifenten*), White-eyed Pochards (*Moorennten*), Velvet Ducks (*Sammetenten*), Scoters (*Trauenten*), and Eider Ducks (*Eider-enten*), which provide such luxurious down, cross the water in all directions; while numerous Gulls (*Möven*), of the Common (*Sturm*), Herring (*Silber*), and Black-backed (*Mantel*) species, sail at various altitudes through the air.

But now "Helios" is directing his fiery steeds homewards, warning us also to return to our homesteads. On the way we meet with a solitary Merganser (*Sägetaucher*), called "Norh" by the people on the coast. A poor fishing-boat, heavily laden with spoil, follows in our wake. The nets have gathered a rich harvest among the Scaup Ducks (*Bergtauchenten*), which were seeking for crustacea and mollusca at the bottom of the sea.

(To be continued.)

ORIGIN OF THE AMERICAN VARIETIES OF THE DOG.

BY PROFESSOR A. S. PACKARD.*

THE impression that the Domestic Dog of the Old World has descended from wild species distinct from the Wolf may be well founded;† but in America the evidence tends to prove that the Eskimo and other domestic varieties of dogs were domesticated by the Aborigines, and used by them long anterior to the discovery of the Continent by the Europeans, the varieties in question originating from the Gray Wolf or Prairie Wolf.

First, as to the Eskimo Dog. From the following extract, from Frobisher, it appears evident that the Eskimo had the present breed of domestic dogs long anterior to the year 1577. Frobisher's account of the Eskimo themselves is, so far as we know, the first extant, and is full and characteristic. After describing the natives, he goes on to say:—"They frank or keepe certaine dogs not much unlike wolves, which they yoke togither, as we do oxen and horses, to a sled or traile: and so carry their necessaries over the yce and snow from place to place: as the captive whom we have made perfect signes. And when these

* From 'The American Naturalist,' September, 1885, pp. 896—901.

† See 'The Zoologist,' 1884, p. 393.

dogs are not apt for the same use; or when with hunger they are constrained for lack of other vituals, they eate them, so that they are as needful for them in respect of their bignesse as our oxen are for us.”*

Regarding the Eskimo Dog, Richardson remarks in his ‘Fauna Boreali-Americana’ (p. 75):—“The great resemblance which the domestic dogs of the Aboriginal tribes of America bear to the wolves of the same country was remarked by the earliest settlers from Europe (Smith’s ‘Virginia’), and has induced some naturalists of much observation to consider them to be nearly half-tamed wolves (Kalm.).

“Without entering at all into the question of the origin of the domestic dog, I may state that the resemblance between the wolves and the dogs of those Indian nations who still preserve their ancient mode of life continues to be very remarkable, and it is nowhere more so than at the very northern extremity of the Continent, the Esquimo dogs being not only extremely like the gray wolves of the Arctic circle in form and colour, but also nearly equalling them in size. The dog has generally a shorter tail than the wolf, and carries it more frequently curled over the hip, but the latter practice is not totally unknown to the wolf. . . . I have, however, seen a family of wolves, playing together, occasionally carry their tail curled upwards.”

The Hare Indian Dog is also supposed to be a domesticated race of the Prairie Dog, as shown by the following extract from Richardson’s ‘Fauna Boreali-Americana’ :—

“*Canis familiaris* var. *C. lagopus*. Hare Indian Dog.—This variety of dog is cultivated at present, so far as I know, only by the Hare Indians and other tribes that frequent the border of Great Bear Lake and the banks of the Mackenzie. It is used by them solely in the chase, being too small to be useful as a beast of burden or draught.” It is smaller than the Prairie Wolf. “On comparing live specimens I could detect no marked difference in form (except the smallness of its cranium), nor in fineness of the fur and arrangement of its spots of colour. . . . It in fact bears the same relation to the prairie wolf that the Esquimo dog does to the great gray wolf.”

* The second voyage of Master Martin Frobisher, 1577. Written by Master Dionice Settle, ‘Hakluyt’s Voyages,’ vol. iii., p. 62 (1810).

Another variety of Indian Dog is Richardson's *Canis familiaris* var. *novecaledonie*, Carrier Indian Dog. The Attuah, or Carrier Indians of New Caledonia, possess a variety of Dog which differs from the northern races,—“It was the size of a large Turnspit dog, and had somewhat the same form of body; but it had straight legs, and its erect ears gave it a different physiognomy.”

The Spitz Dog, Mr. J. A. Allen informs us, is, with little doubt, a domesticated subarctic variety of the Prairie Wolf.

Sir John Richardson, in the Appendix to Back's ‘Narrative, 1836 (p. 256), remarks :—“Indeed the wolves and the domesticated dogs of the fur countries are so like each other that it is not easy to distinguish them at a small distance; the want of strength and courage of the former being the principal difference. The offspring of the wolf and Indian dog are prolific, and are prized by the voyagers as beasts of draught, being stronger than the ordinary dog.”

The origin of the ordinary Indian Dog of North America is obscure; but Richardson, who names it *Canis familiaris* var. *Canadensis*, North American Dog, throws much light on its origin :—“By the above title I wish to designate the kind of dog which is most generally cultivated by the native tribes of Canada and the Hudson Bay countries. It is intermediate in size and form between the two preceding varieties; and by those who consider the domestic races of the dog to be derived from wild animals, this might be termed the offspring of a cross between the prairie and gray wolves. . . . The fur of the North American dog is similar to that of the Esquimo dog breed, and of the wolves. The prevailing colours are black and gray, mixed with white. Some of them are entirely black. . . .” He quotes from Theodat's ‘Canada,’ written in 1630, to show that at the early period, and “perhaps even before the arrival of the Europeans, they formed an esteemed article of food of the natives.” Confirmatory of the theory of the Re-Columbian origin of the Indian Dog may be cited the following extract, from Hakluyt's ‘Voyages,’ regarding the Indian dogs seen on Cape Breton Island, 1593 :—“Here divers of our men went on land upon the very Cape, where at their arrival they found the spittes of oke of the savages which had roasted meate a little before. And as they viewed the countrey, they sawe divers beastes and

foules, as blacke foxes, deere, otters, greate foules with red legges, pengwyns, and certaine others." . . . " Thereupon nine or tenne of his fellowes, running right up over the bushes with greate agilitie and swiftnes, came towards us with white staves in their handes like halfe pikes, and their dogges of colour blacke, not so bigge as a grayhounde, followed them at their heeles; but wee retired unto our boate without any hurt at all received."*

It is probably this variety, the bones of which have been found by Dr. J. Wyman in the shell-heaps of Casco Bay, Maine.

"The presence of the bones of the dog might be accounted for on the score of its being a domesticated animal, but the fact that they were not only found mingled with the edible kinds, but, like them, were broken up, suggests the probability of their having been used as food."

We have not seen it mentioned, however, by any of the earlier writers that such was the case along the coast, though it appears to have been otherwise with regard to some of the interior tribes, as the Hurons. With them, game being scarce, "venison was a luxury found only at feasts, and dog-flesh was in high esteem." . . .

A whole left-half of a lower jaw of a *Wolf* was found at Mount Desert, measuring 7·5 inches in length, making a strong contrast in size with a similar half from a dog found at Crouch's Cove. This was more curved, and had a length of a little less than 5 inches.†

It is possible that the Newfoundland Dog was indigenous on that island, and also an offshoot of the Gray Wolf allied to the Eskimo. In their 'Newfoundland,' Messrs. Hatton & Harvey say (pp. 194, 195), that "There are few fine specimens of the world-renowned Newfoundland dog to be met with now in the island, from which it derived its name. The origin of this fine breed is now lost in obscurity. It is doubtful whether the Aborigines possessed the dog at all; and it is highly improbable that the Newfoundland dog is indigenous. Some happy crossing of breeds may have produced it here. The old settlers say that

* "The voyage of the ship called the 'Marigold,' of M. Hill, of Redrise, unto Cape Breton and beyond, to the latitude of 44 degrees and a half, 1593. Written by Richard Fisher, Master Hilles man, of Redrise."—Hakluyt, 'Voyages,' iii., p. 239.

† 'The American Naturalist,' January, 1868, p. 576.

the ancient genuine breed consisted of a dog about 26 inches high, with black-ticked body, gray muzzle, and gray or white stockinginged legs, with dew-claws behind." Judicious treatment has greatly improved the breed. "Their colour is white with black patches, curly coats, noble heads, and powerful frames. The favourite Newfoundland dog at present is entirely black, of large size, from 26 to 30 inches in height, remarkable for his majestic appearance. It is now generally admitted that there are two distinct types of the Newfoundland, one considerably larger than the other, and reckoned as the true breed; the other being named the Labrador, or St. John's, or Lesser Newfoundland. The latter is chiefly found in Labrador, and specimens are also to be met with in Newfoundland."

Regarding the dogs of the Mexican Indians, Nadaillac says, in his 'Prehistoric America':—"The European dog, our faithful companion, also appears to have been a stranger to them."* His place was very inadequately filled by the Coyote or Prairie Wolf,† which they kept in captivity, and had succeeded in taming to a certain extent.

In a recent visit to Mexico, not only along the railroads, but in the course of a stage ride of about 500 miles through provincial Mexico, from Saltillo to San Miguel, we were struck by the resemblance of the dogs to the Coyote; there can be little doubt but that they are the descendants of a race which sprang from the partly-tamed Coyote of the ancient Mexican Indians. At one village, Montezuma, we saw a hairless or Carib Dog, as we supposed it to be; similar dogs are sometimes seen in the United States.

Finally, that the domestic dog, and the Gray as well as the Prairie Wolf, will hybridize has been well established. Dr. Coues has observed hybrids between the Coyote and domestic dog on

* Certain kinds of dogs were, however, domesticated in America. They were called *Xulos* in Nicaragua, *Tzomes* in Yucatan, and *Techichis* in Mexico. These were considered to afford very delicate food after having been fattened.

† *Canis latrans*, Baird. In a description of Virginia, published in 1649, we read:—"The wolf of Carolina is the dog of the woods. The Indians had no other curs before the Christians came amongst them. They are made domestic. They go in great droves in the night to hunt deer, which they do as well as the best pack of hounds."

the Upper Missouri.* To this we may add our own observations made at Fort Claggett, on the Upper Missouri, in June, 1877. We then were much struck by the wolf-like appearance of the dogs about an encampment of Crow Indians, as well as the fort. They were of the size and colour of the Coyote, but less hairy, and with a less bushy tail. They were much like those lately observed in Mexico, and I have never seen such dogs elsewhere. Their colour was a whitish tawny, like that of the Eskimo Dog.

Confirmatory of these observations is the following note, by J. L. Wortman, in the 'Report of the Geological Survey of Indiana for 1884':—"During extended travel in Western U.S., my experience has been the same as that recorded by Dr. Coues. It is by no means uncommon to find mongrel dogs among many of the Western Indian tribes, notably among Umatillas, Bannocks, Shoshones, Arrapahoes, Crows, Sioux, which to one familiar with the colour, physiognomy, and habits of the Coyote have every appearance of blood-relationship, if not in many cases this animal itself in a state of semi-domestication. The free interbreeding of these animals, with a perfectly fertile product, has been so often repeated to me by thoroughly reliable authorities, and whose opportunities for observation were ample, that I feel perfectly willing to accept Dr. Coues's statement."

To these statements may be added that of Mr. Milton P. Pierce, published in 'Forest and Stream,' for June 25th, 1885, as follows:—"Hybrid wolves have always been very common along our western frontiers. I have seen several of them sired both by dogs and wolves, and all I have seen have resembled wolves rather than dogs."

It is to be hoped that our mammalogists may collect, and examine this subject, particularly the skulls and skins of numerous specimens, both of dogs and wolves, and of the hybrids between them. Further observations are also needed as to the fertility of the hybrids.

* 'The American Naturalist,' 1873, p. 385.

REMARKS ON THE COMMON VIPER, *VIPERA BERUS*, AND
ON ITS SUBSPECIES *V. SEOANEI*.

By G. A. BOULENGER.

IT is frequently believed that existing species can only be separated by the presence of gaps in the series of variations, or, in other words, that "good species" ought always to be sharply distinguishable without the interposition of any connecting forms; that if two or more species are completely linked together they should be united, save to be distinguished as subspecies. However recommendable this principle may be when naturalists have to deal with forms of which they possess little material and information, it cannot always be carried out when knowledge attains a nearer approach to perfection, as in the case of certain groups of European reptiles. Since proper attention is being paid to the variations of the commoner forms, several species, on the distinctness of which no one has ever ventured to cast a doubt, have been found so linked together as to be in some cases utterly inseparable by the means of investigation at our command. One of the most striking examples of this kind of difficulty is presented by the Vipers of Europe, a subject which has already been discussed by Bosca, Lataste, and Tourneville, but on which there still remains a good deal to say.

Until a few years ago only three forms of European Vipers were distinguished, one forming the genus *Pelias* (Merrem, 1820), viz., *P. berus*, L., the two others the genus *Vipera* (Laurenti, 1768), viz., *V. aspis*, L., and *ammodytes*, L. The former genus was characterised by the presence of three large sincipital shields; the latter by the absence of these shields, the head being entirely covered with small scales. The two species of *Vipera* proper were distinguished by the presence in *V. ammodytes* and the absence in *V. aspis* of a large horn-like protuberance on the end of the snout. A strict examination of a large number of specimens from various localities shows, however, that the distinction of species is by no means so simple. I should not even allude to the rejection of the genus *Pelias*, as I go so far as to doubt the possibility of surely distinguishing in all cases *V. berus* from *V. aspis*, were it not that, in spite of the objections of recent

authorities,* the authors of faunistic lists and popular works in this country still adhere to the generic separation of *V. berus* and *aspis*. An example of this inconsistency is to be found in the article "Reptiles" in Cassell's 'Natural History,' which contains a figure of *V. aspis*, with the lettering "Common Viper," which latter species is regarded, in the text, as generically distinct from the former!

The first blow to the old conception of the species of Vipers was dealt by Bosca, who described a new form from Spain, intermediate between *V. aspis* and *V. ammodytes*, which he named *V. latastei*.† He was shortly followed by Lataste, with a new subspecies, also from Spain, *V. berus seoanei*,‡ intermediate between *V. berus* and *V. aspis*. That these forms are not to be regarded as hybrids between their allies is proved by the fact that the latter do not co-exist in the Spanish Peninsula.

The chief object of this note is to show that, although *V. berus* and *V. aspis* must continue to be admitted as species, in spite of the complete transition from one to the other, there is no reason to maintain the form *V. seoanei* even as a subspecies, the characters upon which it was founded not being sufficiently constant. The following is the diagnosis published by Lataste:—"Vipera seoanei rostrum leviter (sed scutellorum prominenti ex oculo ad oculum margine) excavatum, *aspidis* et *beri* intermedium, habet; frontalia parietaliaque scuta omnino desunt, vix majusculis, minoribus tamen quam illa quae *aspidum* girundicarum notavi, scutellis irregulariter in vertice nonnunquam conspicuis; unica scutellorum serie inter oculos et supra labialia; cephalæis demum scutellis *beri* quam *aspidis* affinioribus. Præterea, cum *beri* et *aspidis* quartæ et quintæ supra, quintæ et sextæ subtus, *seoanei* vero quartæ supra, quintæ subtus labialibus oculus superponitur." The Natural History Museum received in 1880, from M. V. L. Seoane, a specimen which, except in the total absence of frontal and parietal shields, agrees with the above diagnosis; but it has recently received from the same generous correspondent five more specimens, three of which likewise entirely lack the sincipital shields, the two others, on the contrary, agreeing, in the presence

* Cf. Lataste, Actes Soc. Linn. Bordeaux, (3) x. 1875, p. xxi.

† Bull. Soc. Zool. France, 1878, p. 116.

‡ Op. cit., 1879, p. 132.

and size of these shields, with the typical *V. berus*. In two specimens the eye is situated above the fourth and fifth upper labials, and not above the fourth alone;* another specimen is, in this respect, intermediate between the two extremes. The character of the more prominent rostral canthus is not constant.

The best character for distinguishing *V. berus* from *V. aspis* still remains in the shape of the end of the snout, which is blunt in the former and more or less distinctly turned up in the latter, although not of absolute value, as already pointed out by Tourneville† and F. Müller.‡ Next comes the number of series of scales between the labials and the eye, *viz.*, one series in *V. berus*, two in *V. aspis*, which character has been regarded as the most constant by Jan, Lataste, and Tourneville; however, there is, in the Natural History Museum, a specimen of *V. berus*, a pregnant female from France, which shows two series; and I must also refer the reader to a passage in Strauch's 'Schlangen des Russischen Reiches,' p. 210, which shows that specimens with two series are not infrequent in some parts of Russia.

Lastly comes the character of the development of the sincipital shields, which, if taken by itself, will frequently mislead. As to characters taken from the proportions and scaling of the body and the coloration, I need say nothing, for they are well known to vary to such an extent as to be useless as specific distinctions. Leydig § has, it is true, pointed out a microscopical difference in the structure of the scales of the two species, but its value as a distinctive character requires to be confirmed by the investigation of a larger series of specimens.

ORNITHOLOGICAL NOTES FROM DEVON AND CORNWALL.

BY JOHN GATCOMBE.

My last notes having ended on September 29th, 1884, and having been from home until the end of December following, I commence those for the present year from January 15th, at which

* Leydig, "Einheim. Schlangen," Abh. Senckenb. Ges. xiii. 1883, pl. 1, fig. 8, figures a German specimen with the eye above the fourth labial only.

† Bull. Soc. Zool. France, 1881, p. 41.

‡ Verh. Nat. Ges. Basel, vii. 1885, p. 694.

§ Arch. f. Mikr. Anat. 1873, pl. xxxii.

date I examined a Green Sandpiper, shot by Mr. Dayrell Stephens near Wadebridge, Cornwall, and some Stock Doves, killed at Pamphlete, near Plymouth. I mention the latter as they are so rarely met with in our neighbourhood. Two or three Dippers were also obtained; one of them a slight variety, the white on the breast continuing in a narrow line towards the vent. About the 20th two Hawfinches were killed near Saltash, Cornwall, their stomachs containing fragments of the kernels of some stone-fruit. Fieldfares were also to be found in our markets, but the scarcity of Missel Thrushes for the past few years in this neighbourhood has been remarkable. Indeed, I have hardly seen one since we experienced two unusually severe winters following each other; but they are now, I am glad to say, increasing. The usual number of Black Redstarts made their appearance, and during the late severe weather between thirty and forty Kingfishers, with several Herons, were received by one Stonehouse birdstuffer alone. A Kingfisher was also brought to him which had been taken on board ship, an account of which I afterwards received from a friend, who was a passenger:—"The Kingfisher was first seen on board 'The Sheila' off the Western Isles, about a week before arriving in port, but it only lived a few days in England. It must have fed on very little whilst on board, as it was only seen in the vicinity of the engine-room, where it was caught." Another Kingfisher was captured near Plymouth with bird-lime.

On February 2nd a fine male Scaup and a Shoveller were obtained, and up to this date, after some severe gales, Kittiwakes were plentiful in the Sound. On the 5th I examined a Common Guillemot, which had thus early assumed its full breeding plumage.

On March 1st *Larus ridibundus*, with full black head, and Lesser Black-backed and Herring Gulls in breeding-dress, appeared. The stomach of a Green Woodpecker I examined was crammed with the white larvae of a wood-boring beetle about an inch in length. On the 13th I observed the first Wheatear, and, at the same time, the last Black Redstart for the season, at the Devil's Point, Stonehouse. A male Peregrine Falcon was killed two days since at Sheviock, near St. Germans, Cornwall; its plumage was immature, but there were a few new barred slate-coloured feathers appearing on the back; its stomach contained the feathers and legs of a Blackbird and Green Linnet.

This reminds me of the extraordinary number of Greenfinches which made their appearance in this neighbourhood at the beginning of the winter, remaining until the end of March. Indeed places in the Docks, where ships discharged their cargoes of grain, actually swarmed with them, and when on the ground although mingled with the usual vast flocks of Sparrows frequenting the locality, their plumage gave a strong green tint to the assembled flock. Hundreds were caught by the birdcatchers who, I was informed, sent the wings or skins to London to be used as ornaments for ladies' hats; but for the truth of this statement I cannot vouch. At the beginning of the close season I took steps to put a stop to such wholesale destruction. About the same time Mr. J. H. Gurney, jun., remarked the appearance of a similar multitude of Green Linnets in the neighbourhood of Norwich (*Zool.* 1885, p. 150). By April 23rd Razorbills were in full breeding plumage.

On May 9th observed the first Swifts. The stomach of a Cuckoo examined was filled with the larvæ of the fox-moth. Several Tawny Owls and a Great Spotted Woodpecker were brought to our birdstuffer within the last few days, and I saw in his shop a large and very old tame Duck, which had assumed the plumage of the drake, even to the curled feathers in the tail. He had also a singular variety of the male Blackbird, the whole plumage of which was pure white, with the exception of the upper tail-coverts which was of a deep black, although, strange to say, the under tail-coverts were as white as the rest of the body.

For the month of June there is little to record, except that the birdstuffer received several Tawny and Barn Owls.

On July 4th I visited the breeding-place of the Herring Gulls at Wembury, and found about the usual number of old birds and young, some of the latter having grown to a large size, although not yet able to fly. On a shelf close to a nest and two young birds lay a large piece of conger eel, which appeared not to have been touched.

At the beginning of August, whilst fishing in the Cattewater near Plymouth, I observed some Kittiwakes, which seemed to fly in a most extraordinary and unusual manner, with very quick beats of the wings. I afterwards ascertained (on examining one killed) that this was owing to the quill-feathers of both wing and tail being so worn and abraded by picking and exposure to the sun.

weather during the breeding-season as to appear like those of a dried skin badly attacked by moth. On the 7th I saw, at the birdstuffer's, a young Greenshank and an adult female Pochard, the tail- and wing-feathers of the latter being much worn and faded in colour; also a very young Black-headed Gull in its first plumage, showing the brown crescent-shaped mark on the back of the neck, a state of plumage in which it is rarely met with on our part of the coast. It was shot at Warleigh, on the River Tavy. On August 15th examined a young Green Sandpiper, and, on the 19th, another; both were killed at Ivybridge, near Plymouth. A Quail was obtained on the 23rd, a bird seldom met with in this part of the country. Many Choughs, I am told, have been seen on the Cornish coast this summer.

THE MOLLUSCA OF THE COUNTIES OF KENT, SURREY AND MIDDLESEX.

By T. D. A. COCKERELL.

(Concluded from p. 341).

Helix cartusiana var. *leucoloma*.—Beechborough, near Folkestone (Mrs. Fitzgerald).

[Var. *rufilabris*.—Lewes (T. S. Hillman).]

H. rufescens.—Very common. Kingsgate, Monkton, Canterbury (L. Fenn), St. Mary Cray, Dorking, Bedford Park.

Var. *rubens*.—Folkestone (A. H. Shepherd); near Caterham; Bedford Park.

Var. *albida*.—St. Mary Cray; near Putney; Hampton Court.

H. concinna.—Minster, Orpington, Godalming, Ealing.

Var. *albida*.—Ebbsfleet; near Oxted.

Var. *minor*.—Dover (Jeffreys).

H. hispida.—Reculvers, Orpington, Redhill, Ealing.

Var. *albida*.—Chislehurst; Walton Heath, near to Tadworth Court, with *H. rotundata* v. *Turtoni* (K. M'Kean).

Var. *subglobosa*.—Hammersmith (Jeffreys).

Var. *subrufa*.—Headley Lane (Loydell and Rowe).

Var. *nana*.—Walmer (A. H. Shepherd).

H. sericea (= *granulata*, Ald.).—West Drayton (R. W. Cheadle); near Sevenoaks (Smith); one dead shell at Reigate (E. Saunders); also reported from Hants, East Kent, and Herts.

[Var. *cornea*.—North Hants (Fitzgerald).]

H. fusca.—Morden College fields (Cooper). [Recorded for East Sussex and Bucks.]

H. virgata.—Abundant on the chalk. Walmer, Birchington, Orpington, Croydon, &c. Middlesex (W. D. Roebuck).

Var. *albicans*.—Near Faversham (Fairbrass), and Surrey.

Var. *subalbida*.—Near Faversham (Fairbrass).

Var. *subaperta*.—Epsom Downs (Loydell and Rowe).

Var. *submaritima*.—Pegwell Bay. [Isle of Wight (Pickering).]

Var. *alba*.—Surrey. [Near Yarmouth, I. of Wight (C. Ashford).]

[Var. *major*.—Eastbourne (J. W. Taylor). Var. *minor*, Afton Down, Isle of Wight (C. Ashford), where also are found var. *nigrescens* and var. *leucozona*. Monst. *sinistrorum*, near Afton toll-gate (C. Ashford).]

H. caperata.—Westgate; Orpington; near Shiere; Acton.

Var. *major*.—Surrey (Choules); also said to occur in West Kent, at Erith, and East Sussex.

Var. *ornata*.—Near Orpington; Box Hill (Loydell and Rowe); Willesden.

Var. *Gigaxii*.—Sandwich (Jeffreys).

[Var. *alba*.—Isle of Wight (Jeffreys); var. *obliterata* and var. *fulva*, Yarmouth, Isle of Wight (C. Ashford).]

H. ericetorum.—Local. Kingsdown, near Deal; Margate; Chislehurst; Orpington (S. C. C.); Warlingham.

Var. *alba*.—Kingsdown (A. H. Shepherd); Selsdon, Woldingham Downs, and many other places, almost as common as the type (K. M'Kean).

Var. *major*.—Kent (Loydell and Rowe).

Var. *minor*.—Riddlesdown (A. H. Shepherd).

H. rotundata.—Abundant. Minster, Orpington, Shiere, Perivale, Ealing.

Var. *alba*.—Eynsford; Otford; Folkestone (A. H. Shepherd); Headley Lane (Loydell and Rowe); Addington; Orpington; Leatherhead (J. H. Ponsonby); Chislehurst (S. C. C.).

[Var. *rufula*.—Herts.]

Var. *Turtoni*.—Haling Park, in a chalk quarry (K. M'Kean).

[*H. rupestris*.*—Lewes (Hillman); Singleton (W. Jeffery).]

* *H. rupestris* has been recorded from Mickleham by Cooper, but I think this requires confirmation. In the Census of Mollusca in the July 'Journal of Conchology' this species is down for East Kent and Herts, but I am not aware of the precise localities. It has also been found in Oxfordshire.

H. pygmæa.—Margate, one specimen near Foreness Point; Gatton Park (E. Saunders); Orpington; Barnes; under fragments of chalk or stones lying among the grass on the southern slopes of the Surrey Downs (K. M'Kean). [Near Winchester (B. Tomlin), and in East Sussex.]

H. pulchella.—Margate, Chislehurst, Shiere, Twickenham.

Var. *costata*.—Margate, Ebbsfleet, Chislehurst, Reigate, Kew; Grove Park, Chiswick.

H. lapicida.—Fairly common in West Kent and Surrey, but in East Kent I have never taken it living, although dead shells are not rare at Minster and near Deal. Bickley; near Shiere, &c. [South Essex (W. D. Roebuck).]

Var. *albina*.—Reigate (E. Saunders). [Reading (Col. Wilmer).]

Var. *minor* has been found at Epsom (Daniel).

[*H. obvoluta*.—Up Park, Sussex (J. E. Harting); near Winchester (B. Tomlin); Buriton, Hants, and all along the hill-side from Buriton to the dell, Treyford. Common at Treyford, in beech woods chiefly, and specially near water (J. Gordon).] [Add to localities named Ashford Wood and Stonor Hill (Rev. W. Hawkes); Kingley Vale, near Chichester (W. Jeffery); Crabbe Wood, near Winchester (W. A. Forbes); amongst moss at the roots of hazel, and on beech trees at some height from the ground.

—ED.]

[*Cochlicella acuta* (= *Bulimus acutus*).—Eastbourne (Langdon, *fide* Jenner); Isle of Wight. Var. *elongata*, Needles (E. Westlake, *fide* Taylor). Var. *bizona*, Highdown, near Freshwater (C. Ashford). Var. *alba*, var. *strigata*, and var. *inflata*, Afton Down (C. Ashford).]

Bulimus montanus.—Near Godalming (H. W. Kidd); beech wood skirting the grounds of Waverly Abbey, Farnham (K. M'Kean); rejectamenta of Thames near London (Cooper). [Near Buriton (Rimmer).]

B. obscurus.—Foreness Point; Orpington; Reigate.

Var. *albinos*.—Bickley; Bromley; Sevenoaks (Smith); near Croydon (Rimmer). [Hants, Essex, and East Sussex.]

B. goodallii.—Kensington Palace Garden (Miss Donald); Nursery-ground, Tottenham (C. Ashford); Weybridge (Daniel). This is not an indigenous species, but has been introduced among cultivated plants.

B. ellipticus.—Fossil in Woolwich beds.

Pupa umbilicata.—Minster; Bickley; Shortlands; near Reigate; Middlesex (W. D. Roebuck).

Var. *edentula*.—Upper Gatton, near the Suspension Bridge, and at Chipstead (K. M'Kean).

Var. *albina*.—One thrown up by the sea at Margate (S. C. C.).

Pupa marginata.—Birchington; Chislehurst, but apparently confined to an area a few yards in extent; Blackheath (Loydell and Rowe); Epsom Downs (M'Kean); rejectamenta of Thames at Twickenham (S. C. C.).

Var. *edentula*.—Rejectamenta of River Stour near Richborough; Chislehurst; Epsom Downs (M'Kean).

[Var. *bigranata*.—Lewes and Beachy Head (Rimmer).]

[*P. secale*.—Recorded for Sussex, Herts, and Bucks. Lewes (C. H. Morris). Var. *minor*, Sussex.)]

Vertigo antivertigo.—Barnes; margin of Basingstoke Canal near Brentwood (M'Kean); Redhill (E. Saunders).

[*V. mouliniana*.—Hants and Herts.]

V. pygmæa.—Near Oxted; rejectamenta of River Stour at Richborough; Box Hill, Wray Park, and Reigate (E. Saunders); rejectamenta of Thames at Twickenham (S. C. C.).

[*V. alpestris*.—Fossil at Coptford, Essex (British Museum).]

V. substriata.—Redhill (Daniel *fide* E. Saunders).

V. pusilla.—Near Reigate (E. Saunders).

V. angustior.—Battersea Fields (Stephens).

V. edentula.—Surrey (M'Kean); Beechwoods, near Reigate (E. Saunders).

V. minutissima.—Thrown up by the sea at Margate (S. C. C.). [Isle of Wight.]

Balea perversa.—Kingsdown (A. H. Shepherd); Bickley; Wray Park (E. Saunders); Coombe Lane (M'Kean); Perivale (R. W. Cheadle); Grove Park, Chiswick, two very young ones (D. B. C.). [Near Winchester (Tomlin).]

Clausilia rugosa.—Very common on trees, &c. At Ebbsfleet I found over 100 at the roots of one small willow tree. Minster; Canterbury (Miss L. Fenn); Orpington; near Dorking; Bedford Park; Kensal Green.

Var. *gracilior*.—Near Ramsgate (Slater); Battersea Marshes (Jeffreys); Headley Lane (Loydell and Rowe). [E. Sussex.]

[Var. *dubia*.—"New Forest." Var. *albinos*, Dinton Hall, Bucks Goodall); Colchester (Rimmer); Christchurch (Ashford).]

Monst. *dextrorsum*.—Sevenoaks (Smith).

C. Rolphii.—Very local. Plentiful in Belvedere Park under chestnut trees, and also on Plumstead Common (H. Leslie); near Dorking; Shooter's Hill Road (Loydell and Rowe); Leatherhead (J. H. Ponsonby). [Robertsbridge, Sussex; Up Park, Sussex (J. E. Harting); near Winchester (Tomlin).] This species is very frequently found in company with *Azeca tridens*; this was the case with the Dorking, Leatherhead, and Robertsbridge localities, and Mr. C. Ashford reports it as occurring with *A. tridens* var. *crystallina* at Petersfield. [The following localities for this species may be added:—Charlton, Ashford, Sevenoaks, Southborough, Tunbridge Wells, and Mickleham, near Dorking. It is generally found in damp situations in woods, amongst dead leaves and moss, and under nettles and dog's mercury, as well as on the trunks of trees.—ED.]

Var. *Mortilleti*.—This is said to have been found in Kent, and also, according to R. Tate, at Hastings.

C. biplicata.—Near Putney; near Hammersmith; Fulham; two in rejectamenta of Thames at Dartford Creek (H. Leslie).

Var. *Nelsoni*.—Near Hammersmith (J. W. Taylor).

C. laminata.—Canterbury (Miss L. Fenn); Orpington (S. C. C.); Bickley; Warlingham; Epsom and Ranmer (Loydell and Rowe); Dartford (H. Leslie).

Var. *albida*.—Eynsford; Ranmer Common (Loydell & Rowe); Darnwood, Kent (Stephens); White Hill, Surrey (M'Kean).

Var. *pellucida*.—Dartford, on the chalk (H. Leslie).

Cochlicopa (Azeca) tridens.—Near Dorking; Leatherhead (J. H. Ponsonby).

Var. *crystallina*.—Near Reigate; Stanstead, Kent (Smith); Leatherhead (J. H. Ponsonby). [Lewes (Hillman); Well Wood, Sandridge, Herts (Griffith).]

[Var. *nouletiana*.—Lewes (Hillman).]

C. (Zua) lubrica.—Reculvers; Orpington; near Godalming; near Willesden; Bedford Park.

Var. *minor*, Fischer.—Elmstead, Chislehurst, one under an oak tree.

Var. *minima*, Siem.—Barnes Common.

Var. *nitens*, Kokeil.—Redhill (J. Daniel).

Var. *hyalina*.—Fetcham Common, near Leatherhead (K. M'Kean). Var. approaching *lubricoides*, Farnborough, Kent.

Achatina acicula.—Washed up in immense numbers by the

sea at Birchington; one at Ebbsfleet; one in the rejectamenta of the Stour at Richborough; one at Chislehurst (S. C. C.); Barnes (S. C. C.); rejectamenta of Thames at Kew; Ealing (Brown); Croydon (M'Kean); near Reigate Heath (E. Saunders). [Essex, Herts, Sussex. Afton Down, Isle of Wight (C. Ashford).]

Carychium minimum.—Rejectamenta of River Stour at Richborough (S. C. C.); Chislehurst; Barnes Common; Perivale, near the canal.

Cyclostoma elegans.—Orpington; Epsom (Loydell and Rowe); near Godalming, &c.; East Kent (W. D. Roebuck).

Var. *marmorea*.—Croydon (C. Ashford).

Var. *fasciata*.—Chatham (C. T. Musson, *fide* J. W. Taylor); near Shiere.

Acme lineata.—Folkestone (Mrs. Fitzgerald); also recorded for Gatton, Surrey (E. Saunders); under moss on old posts at Battersea (Cooper). [Bucks.]

Var. *alba*.—Folkestone (Mrs. Fitzgerald).

CEPHALOPODA.

Octopus vulgaris.—Ramsgate (J. T. Hillier).

Sepia officinalis.—Pegwell Bay (S. C. C.)

Sepiola Rondeleti.—Ramsgate (J. T. Hillier).

Loligo vulgaris.—Margate.

L. media.—Ramsgate (J. T. Hillier).

Ommastrephes sagittatus.—Kent and Sussex. Folkestone (Forbes and Hanley).

[*Rossia macrosoma*.—Isle of Wight (Forbes and Hanley).]

ADDENDA.

Kellia suborbicularis.—Margate (S. C. C.).

Syndosmya nitida.—Margate (S. C. C.).

Astarte triangularis.—A single valve at Margate (S. C. C.).

Pisidium nitidum.—Acton Green, in a stream.

P. fontinale.—Bushy Park, Middlesex.

P. fontinale var. *pulchella*.—Ditch between Lee and Charlwood (K. M'Kean).

Anodonta anatina var. *radiata*.—In the little stream between Pendell Court and Redhill, but only at one spot where the bottom is sandy; they are associated with *A. cygnæa* (K. M'Kean).

Unio tumidus var. *radiata*.—Near Twickenham (E. H. Rowe).

Anodonta anatina, var. approaching *complanata*.—Near Twickenham (E. H. Rowe).

Valvata piscinalis monst. *sinistrorum*.—Sunbury (Groves).

[Mr. H. P. Fitzgerald sends me the following list of Mollusca recently taken by himself in the neighbourhood of Preston Can-dover, North Hants :—*Valvata piscinalis* var. *depressa*, *Ancylus lacustris* var. *albida*, *Amalia marginata*, and the dark variety before mentioned, *Limax flavus*, *L. arborum*, *Helix aspersa* var. *tenuior*, *H. lapicida* var. *albina*, and *Vertigo edentula*.]

[*Neretina fluviatilis* var. *cerina*.—Christchurch (Ashford).]

NOTES AND QUERIES.

The British Association.—The accounts received from Aberdeen concur in representing the meeting recently held there to have been a most successful one. A great number of papers were read in the different sections, some of which, owing to pressure of time, had to be divided into sub-sections. In Section D, *Biology*, the chief feature was the address of the President of the Section, Prof. W. C. McIntosh, on the Phosphorescence of Marine Animals, a full report of which will be found in ‘Nature’ for Nov. 17th. Sir John Lubbock contributed an interesting paper on Ants, in continuation of former researches on the same subject; and a Report was read from the Committee appointed to collect evidence on the subject of the Migration of Birds. To this Report we hope to refer more particularly in our next number.

MAMMALIA.

Habits of the Squirrel.—As the Sparrow is becoming a source of trouble to the agriculturist, so is this well-known rodent a cause of anxiety to the forester in those districts north of the Tweed where the *Conifera* flourish. The Squirrel has also another peculiarity in common with the Sparrow, *i. e.*, that it is well known both in town and country; in the former case he may be seen whisking round seemingly in endless rotation in his cage,—the delight of every small girl or boy that passes,—whilst he perhaps imagines each turn will bring him nearer to those pine-woods far away, where he was born. Whilst on the subject of cages, I recollect having long ago had a Squirrel in a cage, which, like most wild animals taken young, became very tame with kindness; one day he escaped, taking up his abode in some fir-trees at some distance from the house; whenever my old nurse went near his new abode, on rattling her keys down he would come, for these selfsame keys opened the box in which his nuts were kept; at length

however, a day arrived when he did not appear to the well-known signal—his love of nuts had brought him within reach of the gardener's long-muzzled gun. To those living in the country, on the other hand, especially in well-wooded districts, from the first leaf of summer to the last of autumn the Squirrel is constantly to be seen, whether chattering in the pine-tops, taking those flying leaps from tree to tree with such rapid movement as to bring to mind his American congener, or watching with the brightest of eyes from the sheltering foliage of a nut-bush the approach of his sworn enemy the irate gardener. In the early morning, too, in summer he may be seen wending his way across the lawn, with tail uplifted to avoid the dew. The Squirrel, like all rodents, is very prolific, but is unlike most of the order, however, in building its nest in a tree, placed generally near the top of some evergreen, which serves the double purpose of concealment and protection from the winter gales. The exterior of the nest, although not unlike that of the Magpie, is far more comfortable within, for as the Squirrel generally passes the colder winter months in a state of partial hibernation warm materials are required to keep up the animal heat so necessary to healthy vitality; in the nest, too, the provident animal has a store of its favourite food, nuts and different kinds of cones, Squirrels delighting in the seeds they contain. This county being celebrated for its nuts, either in the hedges or cultivation, is consequently a land of plenty to them; they have no difficulty in laying in their winter stores. I recollect an old oak-tree in the garden of a house I lived in once, the rugged bark of which was filled with nut-shells, the *débris* of a Squirrel's feast, for the ingenious animal to save itself the trouble of holding the nuts placed them firmly in the deep furrows of the bark whilst the process of gnawing was going on. The Squirrel is very destructive to most kinds of conifer, gnawing off the young shoots; they will also in dry weather attack the shoots of other trees, particularly the horse-chestnut. This predilection of theirs for the pine-shrubs imparts a turpentine flavour to the flesh, for although the Squirrel is not eaten with us, to the inhabitants of other European countries it is looked upon as a delicacy. I remember once, whilst shooting Woodcocks in the forests of the Morbihan, Lower Brittany, one evening on returning from "la chasse," meeting my host in a state of suppressed excitement; on enquiring the cause of so much feeling, he told me that he had made "grande chasse," desiring me at the same time to inspect the "gibier," so in we went to the "salon" of Monsieur. "There," cried Monsieur de F., pointing to the ceiling; looking up I saw hanging from two nails an old Crow and a Squirrel; a feeble grin was my only reply. So pleased, however, was he that I was asked as a great treat to dine with him that evening "pour manger l'écureuil." In declining the proffered hospitality I thought it might have been worse if it had been the aged specimen of *Corvus corone*. The tail of the Squirrel undergoes a curious change in colour as age

advances, the luxuriant brown making way for a creamy colour, the hair at the same time becoming scanty; the teeth, strange to say, except for great discoloration, do not as a rule exhibit much change as the Squirrel gets older. If Squirrels become too numerous, they will degenerate not only in size, but in general appearance; as this is caused by too much interbreeding there is nothing strange in it. It is to be hoped that the Squirrel will not, like many other interesting animals, be improved off the land; it is consoling to think that his depredations are mostly confined to the property of what I may call the non-speculative classes, who can regard his pretty ways as a fair recompense for the damage done by his sharp teeth.—
HERBERT GOW STEWART (Hole Park, Rolvenden, Kent).

BIRDS.

An Albino Nightjar.—Mr. Pratt, the taxidermist of Brighton, has just now in his shop an albino Nightjar, which was shot at Northease, near Lewes, on or about August 20th. Seen in an ordinary light the bird appears perfectly white; but, with a strong light, faint bars can be seen on the tail, and also a faint line on the scapulars. Mr. Pratt tells me that the eyes were pink.—HERBERT LANGTON (115, Queen's Road, Brighton).

Notes from Hunstanton, Norfolk.—The cold dull weather and N.E. winds seem to have brought down the birds on their autumn migration earlier than usual this year. Adult Sanderlings were pretty plentiful by August 1st; on the 12th I shot the first Knot (young bird), and on the 13th a beautiful mature Turnstone. On the 22nd I shot an adult Richardson's Skua, like the central figure in 'Yarrell,' and saw one or two more of the same species. An immature Cormorant passed me within easy shot near the bathing-machines, and was soon after shot from the pier-end by a boatman. On the 25th I got an immature Purple Sandpiper, and had just picked it up when a large flock of Golden Plover passed high overhead, flying due south. Wild Geese have been seen on one or two occasions this month (August), but, as none were shot, the species cannot be identified.
—JULIAN G. TUCK (St. Mary's, Bucknall, Stoke-on-Trent).

Ring Ouzels in Gardens.—With reference to the note, "Ring Ouzel feeding on Cherries," and editorial remarks thereon in 'The Zoologist' for September (p. 346), I find recorded in my diary that Ring Ouzels are constant visitors to the garden at Skelpick Shooting-lodge, in Strathnaven, Sutherlandshire, when the fruit is ripe. They are even more numerous and troublesome there than the Blackbirds and Thrushes, paying especial attention to the raspberries. I was in the garden on two occasions in August last and saw a good many of these birds, finding it by no means easy to dislodge them from the raspberry-bushes. The tenant of the Lodge informed me that they did considerable damage to his fruit. — S. G. REID (Capt., late R.E.).

Ring Ouzel feeding on Cherries (p. 346).—I have lived nearly forty years in a district in which the Ring Ouzel breeds almost as abundantly as the Blackbird. They are only too pertinacious and too destructive in my garden, and the gardens of my parishioners and others throughout this district. They come in by dozens if left undisturbed for a day or two, and they are distinctly bolder than the Blackbird. Cherries, strawberries, currants (black and red), raspberries, gooseberries, and plums, all are attacked by them, and I have to wage a perpetual war on them and the Blackbirds to prevent the plunder of my garden to the extent of one-half or more. The Blackbirds generally make a precipitate retreat on being disturbed after having been shot at a few times; the Ring Ouzel or (as he is called here) Moor Blackbird retreats only to the nearest wall or a fruit-tree, where he keeps up a frequent cry of disapprobation. The bilberries ripened late this year, and the Moor Blackbirds were in the garden as early as towards the latter part of July; then, after the bilberries were exhausted, they came in again in numbers, as usual. As to their breeding-places here, I should say that the majority breed near the edge of the moor, and very few in proportion on its more remote parts. I have frequently seen these birds on the open moor about the last week in August, when they, to all appearance, are preparing for their southward migration. I was, however, over a large area of moorland on August 31st without seeing a single bird of this species, the edges of that area having to my knowledge furnished breeding-places for, I dare say, nearer a hundred couples than half that number, and food during the bilberry season for any reasonable number. In my walks to and from a distant chapel-of-ease along a customary track or rough road, I used, three or four weeks since, to disturb half-a-dozen to half-a-score within a space of 100 yards, and all the stones and tracks near testified to the aggregate number feeding about by the countless deep purple stains occasioned by their droppings. — J. C. ATKINSON (Danby, near Cleveland).

Discovery of the Eggs of the Knot.—I beg to enclose an extract of a letter to me from Lieut. A. W. Greely, U.S.A., referring to this subject, which extends into rather more detail than the note by Dr. Hart Merriam in the July number of 'The Auk,' reprinted with comments in 'The Zoologist' for September:—"Washington, D.C., May 25th, 1885. My dear Major Feilden,—I have had it in mind many a day to tell you how a Knot's egg looks, but my strength is not equal to all demands, and I have been silent. In the egg-sac of a Knot were found twenty-one eggs, all sizes, including one completely-formed egg with hard shell. Its longer axis was 1·10 in., and the shorter about 1·0 in. The ground-colour was light peagreen, closely spotted with small brown specks about the size of a pin's head. —A. W. GREELY." It would therefore appear that the members of the Greely Expedition had no better luck in finding the actual

nest of *Tringa canutus* in Grinnell Land than the British Expedition of 1875-76. Both expeditions seem to have been singularly unfortunate in this respect, for the Knot during the breeding-season was tolerably common in the neighbourhood of Discovery Bay (Fort Conger station of the Americans), as well as around Floeberg Beach, the winter-quarters of H.M.S. 'Alert,' still further north. Our Arctic voyagers to the Parry Archipelago in the first half of this century seem to have found the Knot breeding there in great abundance, and its nest and eggs do not appear to have been considered difficult to find. I fancy that the Knot must be far more numerous there than in Grinnell Land. — H. W. FEILDEN (West House, Wells, Norfolk).

Gathering of Swallows and House Martins. — There is no surer sign of the waning year—no better or more interesting indication of the advent of autumn days—than the congregation of many migratory birds ere taking their departure to the oases of Northern Africa. Swallows and Martins perhaps congregate, previous to migration, as much as, or even more than, any other birds. One of the prettiest of these "autumn manœuvres" it has ever been my lot to witness came under my notice on August 22nd last. I was travelling up to London by the South Western Railway from Exeter, and when about four miles from Salisbury we stopped for a few minutes at the little country station of Wilton. Close to the station is a large field crossed by two telegraph-wires, the posts being perhaps 150 yards apart. From end to end these wires were covered with Swallows (*Hirundo rustica*) and House Martins (*H. urbica*), the latter species preponderating. So thickly did they cluster that from a distance the wires resembled two large cables; and every now and then fresh arrivals would strive to alight by pushing off their companions, when the chain seemed broken for a moment ere every bit of room was again taken up. The air was one dense throng of fluttering "Swallows," and their merry notes could be heard above the noise of the engine as it fretted and fumed, all impatient to be off again. It was indeed a pretty sight, just in the sunset hour, when the air seemed flooded with a soft almost unnatural golden light, and all Nature filled with repose. Hope beat high in each little Swallow-breast; the resistless impulse to migrate was dawning in each youthful bird; whilst dim recollections of distant Africa filled the old ones with desire to leave their northern home once more to sport and gambol over the palm-groves of the south. Yet how many of this fluttering throng will never reach the distant goal, but quietly succumb to the perils of the long journey before them!—CHARLES DIXON (London).

Lesser Black-backed Gull breeding on the Yorkshire Coast. — Mr. Carter's interesting note (p. 346) has quite satisfied me that the Lesser Black-backed Gull nests on the coast of Yorkshire. The comparatively low cliffs between Scarborough and Filey, with their grass-covered ledges, would

be much more congenial to this species than the almost perpendicular chalk precipices at Buckton and Speeton. Mr. Carter may well be congratulated on having added this fine species to the list of Yorkshire breeding-birds.—
JULIAN G. TUCK (St. Mary's, Bucknall, Stoke-on-Trent).

Black-chinned Bramblings. — Mr. J. H. Gurney's interesting remarks (p. 346) on Black-chinned Bramblings induce me to add a few words to his note. The first male Brambling, with a black chin only a quarter of an inch in extent, which I came across was given to me by an East London birdeatcher, but I have forgotten where he netted it. Referring to my annotated 'Yarrell,' I find that on March 25th, 1884, I closely examined about fifteen dozen Bramblings at once in the Spitalfields shops, all being fresh-caught birds from Cambridgeshire. Out of all the number I only counted five females, and only one male showed a tendency to variation. The black feathers irregularly besprinkling the throat of this bird show, to my mind, that the presence of the black feathers on the chin or throat is due to an extension of the black face over the surface of the throat. It is not "melanism" any more than the presence of a white chin in a "cheverel" Goldfinch could be strictly termed "albinism"; nor does it arise, I imagine, from unhealthy condition; I regard it rather as a mark of vigour than otherwise. But if, as I am disposed to think, it is only an extension of the black colour of the head, it is obvious we could not expect to find it in the brown or grey-headed female. A third example exhibits an entire black throat to perfection, and from its general brightness is probably an old bird. It was shot near Carlisle, November, 1882. — H. A. MACPHERSON (Carlisle).

FISHES.

The Fish Gallery at the Natural History Museum. — Since the publication of our last number the new Fish Gallery at the Natural History Museum, South Kensington, has been opened to the public. This fine gallery, 140 feet in length by 50 feet in width, is approached from the central hall through the Bird Gallery, out of which it opens at right angles. The greater portion of this collection, which has been arranged by Dr. Günther, F.R.S., the Keeper of the Zoological Department, is exhibited in a series of wall-cases round the room; while the larger specimens, such as the Sharks, Dolphins' Sword-fishes, Wolf-fish, Sun-fish, &c., are arranged on stands and table-cases in the centre of the gallery. A Guide to this collection, we understand, is in course of preparation, and will shortly be printed.

MOLLUSCA.

Uncommon Varieties of Arion and Limax. — Conchologists will be glad to hear of fresh English localities for two uncommon varieties of slugs. I recently found *Arion ater* var. *bicolor* fairly abundant at Chideock, near Bridport, and at New Quay, in Cornwall. At the latter place I also found

a very fine specimen of *Limax maximus* var. *Ferussaci* — ANTHONY BELT (Ealing).

[We do not find these varieties noticed in Gwyn Jeffreys' well-known Text-book. *Arion ater* var. *bicolor* is described by Moquin Tandon (*Hist. Nat. des Mollusques*, ii., p. 11) as of a dull brown colour, yellowish or orange at the sides; and two coloured figures of a young specimen, one elongated, the other contracted, are given on Plate i. of the *Atlas to Ferussac's grand work, 'Hist. Nat. Gen. et Part. des Mollusques Terrestres et Fluviaires.'* *Limax maxima* var. *Ferussaci* is described by Moquin Tandon (*tom. cit.*, p. 29) as of a whitish hue, the mantle covered with round black specks and four rows of larger spots of the same colour. A segment is figured (Plate iv., fig. 5) for comparison with segments of other varieties placed side by side on the same plate, from which it appears that var. *Ferussaci* resembles most nearly var. *cellarius*. It may be well perhaps to point out that the slugs of the genus *Arion* differ from the *Limacidae* or common slugs in having the respiratory orifice placed in front instead of near the hinder part of the shield, in having a slime-gland at the tail, and also in the arrangement of the teeth.—ED.]

CRUSTACEA.

Pisa tetraodon at Penzance.—I have to record the capture in my own nets of a specimen of the very rare Crab (off our shores), the Four-horned Spider Crab, *Pisa tetraodon*. Its correspondence with Bell's description is perfect. My specimen is a female, in fully berry, which will make its preservation somewhat difficult, but my friend Mr. E. Maynard means to attempt it. Bell remarks of this Crab that it frequently occurs in large numbers in given localities, and I have trustworthy information that a Crab of this description (said by the local fishermen to be seen nowhere else) occurs off Port Isaac, on the north coast of Cornwall. I obtained a specimen of this Port Isaac Crab some weeks ago, and put it down as *Pisa Gibbsii*; but, looking at my present capture, I think the Port Isaac Crab is more probably *Pisa tetraodon*.—THOS. CORNISH (Penzance).

NOTICES OF NEW BOOKS.

The Great Auk or Garefowl: its History, Archæology, and Remains.

By SYMINGTON GRIEVE. 4to. London: T. C. Jack. 1885.

As there can be no doubt that the Great Auk, or Garefowl, is now to be numbered amongst birds which are extinct, no living example having been met with for more than forty years, the time seems to have arrived for publishing as complete a history as can be compiled of this very remarkable species. Such a

history has been attempted by Mr. Symington Grieve in the handsomely-printed volume before us.

To a considerable extent, no doubt, the labours of the author have been lightened by the previously-published researches of John Wolley, Prof. Newton, Prof. Steenstrup, M. Victor Fatio, Prof. Blasius, and Sir Richard Owen, all of whom have printed important contributions to the literature of this subject. But, as Mr. Grieve points out in his Introduction, these memoirs are scattered in different volumes and publications of Scientific Societies, and his own work, he says, has been undertaken "not with the impression that he has much to relate that is new to British ornithologists, but more with the desire to bring within the reach of all materials that are at present difficult of access."

In order to determine the area in the northern hemisphere in which the Great Auk existed, Mr. Grieve very properly begins by tracing out the localities in which it is known to have bred, the records of its occurrence or capture, and the places where its remains have been discovered. The following haunts seem to be historically well attested, namely, St. Kilda, Orkney, possibly Shetland, Faroe, the three Garefowl rocks off the coast of Iceland, Danells or Graahs Islands, situated in latitude $65^{\circ} 20' N.$, at one time called Gunnbjornsskjoerne ; then, proceeding westward to the East Coast of North America, we find abundant evidence of its former occurrence on Funk Island, off the coast of Newfoundland, as well as on some of the islands in the Bay of St. Lawrence, and at Cape Breton ; while another station on the same coast at which it probably occurred was Cape Cod, apparently the southern limit of the region in which the bird lived.

In European seas the Garefowl in historic times is not known to have been ever so plentiful as it was in American waters. There at one time, as we learn from the narratives of early voyagers (Carthier, André Thévet, Hore, Parkinson, and others), the fishermen visiting Newfoundland were wont to kill numbers of them for food during the time the birds were assembled on the islands for the purpose of breeding, and whole boat-loads of them used to be carried away to be salted down for provisions. It is easy to understand what a disastrous effect such wholesale destruction must have had upon a bird which could never have been very numerous as a species, which, even if unmolested, could not have increased very rapidly (since it laid but a single

egg), and which, from its incapacity for flight, must always have been more or less at the mercy of its enemies, especially those who, having discovered a breeding-colony (as on Funk Island), ruthlessly slaughtered all they could.

These no doubt have been the chief causes of its extinction. Prof. Steenstrup is of opinion that we should also take into consideration the fact that some of the nesting-places of this bird have been liable to violent natural disturbances, in which circumstance he sees at least a subsidiary cause of the Garefowl's decrease in, and disappearance from, a few places, as, for instance, the Gerfugl Rocks off Iceland.

The result of Mr. Grieve's labours (as embodied in the present volume) to collect and arrange all the materials available for a history of this remarkable seafowl will be most acceptable to ornithologists, although we cannot say that the arrangement of matter is so good as it might have been, or that it is altogether free from inaccuracies. We could point out a few errors, typographical and otherwise, and perhaps supply a few references to passages in other works which Mr. Grieve apparently has not consulted, as, for example, a passage in Wallis's 'History of Northumberland,' 1769 (vol. i., p. 340), and a paper, by the late Dr. Charlton, published in the 'Transactions of the Tyneside Natural History Society,' and afterwards reprinted in 'The Zoologist' for 1860.

The paper on the Great Auk, by Prof. James Orton, to which Mr. Grieve refers as being "cut out of some scientific Magazine or the Proceedings of a Society," adding that he "does not know its source," may be found in the 'American Naturalist,' vol. iii., pp. 539—542. The footnote to this paper (p. 540), very briefly alluded to by Mr. Grieve, was not penned, as he supposes, by Prof. Orton, but by Mr. F. W. Putnam, one of the editors of the journal in question. It is worth quoting in full:—

"That the Great Auk was once very abundant on our New England shores is proved beyond a doubt by the large number of its bones that have been found in the ancient 'shell-heaps' scattered along the coast from British America to Massachusetts. The 'old hunter' who told Audubon of its having been found at Nahunt was undoubtedly correct in his statement, as we have bones of the species taken from the shell-heaps of Marblehead, Eaglehill in Ipswich, and Plumb Island; and Mr. Elliot Cabot has informed me that an old fisherman living in Ipswich

described a bird to him that was captured by his father in Ipswich many years ago, which, from the description, Mr. Cabot was convinced was a specimen of the Great Auk."

At. p. 85 of Mr. Grieve's volume he remarks, with reference to the remains from the shell-heaps near Ipswich, Mass., above alluded to, that he has been unable to ascertain where these bones are at present preserved. If we mistake not, they are to be found in the Peabody Museum at Cambridge, Massachusetts, of which Museum Mr. F. W. Putnam, above mentioned, is the Curator.

The following lines by an accomplished friend, Mr. H. W. Freeland, M.A. (late M.P. for Chichester), and never before published, may be appropriately printed here as a contribution to the poetic literature of the subject :—

THE GAREFOWL.

They seek thee far and near, from shore to shore,
Through creeks and rocks and Outer Hebrides,
As wandering Science fondly sought of yore
The missing Sister of the Pleiades.

'Mid Faroe Islands, where the Gulf Stream flows,
Diffusing warmth and plenty on its way,
They seek thee, while with beauty twilight glows,
And bright Auroras lengthen out the day.

The Orkneys know thee not, though once their boast ;
Volcanic Iceland lash'd by wave and storm,
Seeks fruitlessly along her rock-bound coast
The outline of thy once familiar form.

They seek thee where Norwegian Fjords abound,
And bold adventurers every creek explore ;
Where feather'd tribes securer haunts have found
'Neath sheltering crags on Scania's rugged shore.

They find thee not ! strange mystery that Man
Hath oft his great Creator's works displac'd,
Thou, once a wonder in Creation's plan,
Art now a lingering shade on Memory's waste.

In addition to other illustrations (including those of bones of this bird found in Caithness, and a sheath of an upper mandible from a cave near Whitburn Lizards, Co. Durham), Mr. Grieve's work contains two excellent coloured figures, of the natural size,

of two Great Auks' eggs which are preserved in the Museum of Science and Art, Edinburgh, and a coloured chart purporting to show the supposed distribution of *Alca impennis* (so far as can now be ascertained), its breeding-stations, and localities where specimens of the bird have been procured.

There are, unfortunately, several errors in this chart, owing to its having been prepared before the letterpress was printed, and of which the author himself became aware when too late to make any alterations. The necessary corrections, however, are pointed out in a few pages of "Remarks" following the Index, so that the reader may with a little trouble inform himself of the true state of the case.

European Butterflies. By W. F. DE VISMES KANE, M.A., M.R.I.A.
Post 8vo, pp. xxxiii. 184, pls. 20. London: Macmillan & Co.
1885.

THIS work is intended to meet the requirements of tourists more fully than any previous English publication on the same subject; and the author even ventures to hope that it may attract new disciples to the study of Entomology. Mr. Kane has had considerable experience in collecting in Switzerland, but whether he has succeeded in producing a book which will really be so useful as he hopes is another question.

The volume commences with a rather long Introduction, in which the author expatiates on the delights of collecting; and adds some practical hints for the capture and preparation of specimens, explanations of technical terms, and remarks on localities, variation, &c. On p. xxv. he speaks of the latent tendency of certain butterflies to occasionally recur to a blanched Arctic type, as seems to be the case with such of the *Coliidæ* as inhabit temperate or northern latitudes, and the females of which frequently present an albino form. But as the white form of the female is more abundant in the South African *C. electra* than in many species which inhabit colder countries, and even the *Helice* form of *C. edusa* is commoner in Southern than in Northern Europe, it seems very doubtful whether the white form of *Colias* can be regarded as having any connection with the Arctic Regions.

Next to the Introduction we find the plates, which are entitled

to favourable consideration as being reproduced from photographs, and to a certain extent experimental. But, except in the case of butterflies, in which the colours are very strongly contrasted, photography is rarely very successful. Any defect in the setting or condition is faithfully reproduced, and one side of the same figure is frequently much more distinct than the other. Further experiments are necessary before photographic representations of butterflies can be regarded as preferable to good woodcuts; while coloured figures, unless so inaccurate as to convey a totally false idea of the insect, are, in the reviewer's opinion, far preferable to plain ones, and are almost necessary for beginners. Mr. Kane, however (p. xxvi.), takes an opposite view, observing—"Coloured plates, though attractive to the eye, are (unless of rare merit) too frequently useless, if not misleading, to the student."

On turning to the body of the work we at once encounter its most serious defects. Mr. Kane has unfortunately adopted a plan so imperfect as to render his book useless to beginners, unless they use it in conjunction with others; and it is to be regretted that no attempt has been made to make it complete in itself within its own limits. No characters are given for the families, except for the *Hesperiidae*; while the observations prefixed to some only of the genera are of the most general character, and rarely give any idea of the appearance of the species which they include. Mr. Kane remarks (p. xxi.), "The niceties of arbitrary classification, many of which will become obsolete with a wider study of this order of insects, are out of place in a work of such small compass." But, as a rule, the families and genera of European butterflies are well-defined and natural, and are capable of being explained in a few words. Whether a group is a family or subfamily, and its position in a natural system; and whether a genus admits of subdivision or not, are questions which would be out of place in a popular work; but this is no reason why all information on the characters of families and genera should be withheld, nor why everyone who does not happen to know the genus to which a butterfly belongs should be obliged to work through the entire book to find it, for want of a few words which would point out its approximate position. Under *Papilio machaon* the author writes, "A description of the British swallow-tail is unnecessary. The bright primrose gro. col. f. w. [ground-colour of fore wings] is in this

species and *P. hospiton* broken into patches by the black rays, &c." The other European species of *Papilio* are all described in comparison with *P. machaon*, of which no full description is given. A less serious omission is that of descriptions of larvæ, though it may be conceded that few tourists have time or opportunity to rear them. It is true that the food-plants are generally noticed; but it is a pity that the characters of the larvæ of the various genera were not given, for if this information had been supplied, tourists, and especially residents abroad, might chance occasionally to discover the metamorphoses of many species of which the earlier stages are still unknown. The larvæ of a large number of Alpine butterflies in particular still remain undescribed.

Mr. Kane has been careful to notice all the varieties of each species, and this portion of his work will be useful to those who have already some acquaintance with the normal type, and who have not larger works at hand for reference. The tables of species prefixed to large genera will also be found useful.

Much space has been given to the localities for each species, and, if these had been carefully collected and arranged, the list might have formed one of the most useful portions of the book. Unfortunately it is both incomplete and misleading. A good many localities are given in France and Switzerland; but beyond these two countries the information given is usually vague and general. Thus, although *Apatura iris* is common over a great part of Europe, the localities enumerated are (with the exception of Piedmont) all in France and Switzerland, though its occurrence in Russia is incidentally mentioned. Alsace is enumerated as a locality for *A. ilia*, both under France and Germany. Owing probably to defective punctuation, we find Dresden among the Austrian localities for *Lycæna meleager*; and we have noted other similar slips.

We have never heard of *Danais chrysippus* having been taken in England, as stated at p. 83; but the N. American *D. archippus* has been met with several times within the last few years, and we imagine that Mr. Kane has confused the two insects.

The design of Mr. Kane's book is good, and we regret that we have not been able to speak of it more favourably. The defects to which we have referred are not fundamental, and with due care may be remedied in a second edition.

Lord Malmesbury's Reminiscences of Sport and Natural History.

In 'Memoirs of an Ex-Minister.' 2 vols. 8vo. London : Longmans & Co. 1885.

IN the two entertaining volumes which Lord Malmesbury has published, entitled 'Memoirs of an Ex-Minister,' in which the author's experiences of men and manners are set down in diary-form, we find occasional entries relating to sport with gun and rod, and to the habits of wild animals, which possess an interest for sportsmen and naturalists, but which are likely to be overlooked by readers who might perhaps suppose that an Ex-Minister could have nothing to write about but subjects of political or social import. Lord Malmesbury, though a busy man, who from the exigencies of his position was obliged to be much in London during the earlier and middle part of his political career, had yet a keen appreciation of country life, and enjoyed a good day's shooting or fishing as much as any man. His methodical habits induced him to note these "good days" in his diary, and it is to be regretted that the few scattered entries which are to be found in his book do not supply fuller details which from a sportsman of his experience would have been both interesting and valuable. His experience of stag-hunting in France, to which country he was a frequent visitor, often as the guest of the Emperor Napoleon III., is thus alluded to :—

" 1837, June 15th.—The Duke of Orleans is extremely kind and civil to me, and asked me to hunt at Chantilly. The Stag broke away from the forest, and took us nearly to Beauvais. His Royal Highness presented me with the foot, which the artist Susse has turned into a pen-rack. The Duke also gave me the buttons of his hunt. The costume is dark blue, with a red collar ; his crown and initials on silver buttons " (vol. i., p. 81).

It is perhaps not generally known that deer when brought to bay have a habit of defending themselves by striking vigorously with their fore-feet as well as with their horns. Gilbert White, in one of his letters to Pennant (Letter VII.), thus relates how a dog was killed in this way by a hind in the forest of Wolmer :— " Some fellows suspecting that a new-fallen 'calf' was deposited in a certain spot of thick fern, went with a lurcher to surprise it, when the parent hind rushed out of the brake and, taking a vast spring with all her feet close together, pitched upon the neck of the dog and broke it short in two."

Lord Malmesbury relates that he was once attacked by a deer in this way himself:—

“ 1849, Sept. 22nd.—I had been out deer-stalking; and as I was returning home alone, and by bright moonlight, I saw a hind on the hill a little above the road and shot her; but just as I was stooping over her with a knife, she sprung up and struck at me with one of her fore-feet, hitting me in the forehead just between the eyes. The blow was so violent that it knocked me down and stunned me for a short time, and on recovering my senses I found I was quite blind, but this was only from the blood. Her hoof had cut a deep gash in my forehead and along my nose. The animal was lying quite dead by my side. I walked to the house, which was not far off, and the maid who opened the door was so frightened at my appearance that she fainted forthwith. This laid me up for a week, but with no further consequences ” (vol. i., p. 253).

At his hospitable country seat, Heron Court, near Christchurch, Hants, he used to enjoy some of the best wildfowl-shooting to be had in this country, and fortunate were the guests who were invited to participate in it:—

“ 1850, Nov. 15th.—Heron Court. Lord Clanwilliam and Lord Stanley arrived. The two being the quickest men I know, amused us much by chaffing one another, and I think on the whole Lord Clanwilliam had the best of it. They both of them enjoyed the wildfowl-shooting very much, and were as eager as two boys ” (vol. i., p. 266).

It would have been interesting to know what the “bag” was on this occasion, as also on other occasions when the diary refers to the noble author’s having enjoyed several days’ covert shooting at Knowsley :—

“ 1851, Nov. 10th.—Arrived at Knowsley. Lord Stanley (now Earl of Derby) looks very ill. Great *battue* shooting for next three days.”

His own success in shooting he rarely chronicled, although in his best days he must have been no mean performer with a gun. Here is the result of one shot, however, of which he was justly proud :—

“ 1854, Jan. 6th.—I stalked a flock of Wild Geese behind my pony and got within thirty yards of them, killing five. Very severe weather, with a gale from the S.W., and snow ” (vol. i., p. 421).

Occasionally Lord Malmesbury was the guest of the late Prince Consort at Balmoral, where, as might be expected, he enjoyed both good and varied sport. He relates the following amusing incident during a deer-drive in which he took part :—

"1852, Sept. 4th.—The Prince had a wood driven not far from the house. After we had posted in line, two fine stags passed me, which I missed; Colonel Phipps fired next, and lastly the Prince, without any effect. The Queen had come out to see the sport, lying down in the heather by the Prince, and witnessed all these *fiascos*, to our humiliation!" (vol. i. p. 347).

Amongst the wildfowl killed at Heron Court there were usually a very large number of Teal, and sometimes extraordinary bags were made by good shots. Thus:—

"1853, Jan. 31st.—Lord Anson and Mr. Bentinck arrived; we three went out duck-shooting on the moor's river, and killed 166 Teal. I record this feat, because I believe it to be unequalled with three ordinary guns. They were in thousands after a long flood throughout November and December" (vol. i. p. 383).

In October of the same year we find the noble author back again in Scotland, at Achtnacary, where, on the 20th of that month, he was joined by the Hon. Grantley Berkeley, who, as we learn from the diary, "was as agreeable as he always is; but, considering his great reputation as a sportsman, he did nothing in deer-stalking, being past the age for walking over Lochiel's mountains." (Vol. i. p. 407). The author himself a few days later—

"Killed a good Stag at 168 yards—a running shot through the head (luck, of course)—yet he recovered by the time the dogs and men got up to him, and made a good fight, shaking off the hounds several times, charging one of the gillies, and tearing his clothes with his antlers. Berkeley killed a *Salmo ferox*, weighing 18 lbs., in Loch Arkaig" (vol. i. p. 407).

He himself in this same loch killed a bull-trout of 18 lbs., and Lord Edward Thynne a Salmon of 13 lbs. (Vol. i. p. 439).

On the next page we read:—

"1853, Nov. 5th.—Went to the Forest of Gerran (a primæval wood stretching along the shores of Loch Arkaig), and killed a magnificent Stag with twelve points, a cup on each horn, and double brow-antlers. This wood and that of Gusach, lining the shore of Loch Arkaig, are certainly primæval. The hill is clothed with immense pines, and with almost impenetrable heather. Among the *débris* of centuries and in an older stratum lie many gigantic oaks; one I measured was sixty feet long, and perfectly sound. They were evidently the ancient possessors of the mountain before the younger generation of the red pine usurped their place" (vol. i. p. 408).

In the following month (November, 1853) he was again the guest of the late Emperor of the French, and shooting at Chantilly :—

" 1853, Nov. 26th.—A grand shooting party in an enclosed space of ground. A squadron of Hussars marched up when we arrived, and dismounted to act as beaters. Sky-blue uniform and red trousers. As they wore spurs they were constantly tripping up! There were a great number of Pheasants and some Roe-deer; the latter unable to escape, being fenced in. The guns were the Emperor, Chaumont, Soulageon, Edgar Ney, Col. Henry, Prince Napoleon, Marshal Magnan, Lord Cowley, and myself. We bagged 210 head. More than one Hussar was peppered, upon which his comrades cried out, '*Tiens, tu as de la chance, toi! tu seras décoré!*' The Emperor shot very well, and was most civil to Lord Cowley and me" (vol. i, p. 412).

But of all the entries in the diary, the following will perhaps possess the greatest interest for sportsmen of all classes, since it points to the existence of another journal still in MS., which relates exclusively to sport, and which, we doubt not, a good many of our readers would give much to peruse :—

" 1853, Dec. 26th.—Mr. and Mrs. Disraeli, Mr. and Lady Augusta Sturt, and Lord Anson arrived at Heron Court. Disraeli very low at Palmerston's resuming office, as he thinks the Government are now safe. He is very much occupied and pleased with my library, which was compiled by three generations of men of totally different tastes. The first, my great-grandfather, usually called 'Hermes,' was a great Grecian and classical scholar, and collected all the most perfect editions of the ancient writers. The second, my grandfather, a diplomatist and politician, added all the best specimens of European authors of the last two centuries; and my father, all the most modern literature of his time. What seemed, however, to strike Disraeli more than anything was an autograph journal by my father, recording his sporting pursuits daily for forty years, in which is noted every shot he fired, killed, or missed, with a careful memorandum of the weather day by day" (vol. i, p. 418).

Is it too much to hope that this autograph journal may some day be published? The results of forty years' experience related in his own words by an ardent sportsman would be eagerly perused by those of similar tastes, and are surely too valuable to remain hidden from public gaze in the library at Heron Court.

